

Amendment and Response under 37 C.F.R. 1.116

Applicant: Mark A. Smith et al.

Serial No.: 09/839,385

Filed: April 20, 2001

Docket No.: 10001074-1

Title: INK CONTAINER CONFIGURED TO ESTABLISH RELIABLE FLUIDIC CONNECTION TO A RECEIVING STATION

Listing of Claims

This listing of claims will replace all prior versions, and listings, of the claims:

1. (Currently Amended) A replaceable ink container for providing ink to an inkjet printing system, the inkjet printing system having a receiving station for receiving the replaceable ink container, the receiving station having a fluid inlet and a sealing structure around the fluid inlet, the replaceable ink container comprising:

a reservoir defining a fluid outlet and a sealing surface configured for engaging the sealing structure proximate the fluid outlet, wherein the fluid outlet is configured to allow passage of the fluid inlet into the reservoir ~~and prevent passage of the sealing structure into the reservoir~~, and wherein the engaged sealing surface and sealing structure define a groove therebetween; and

a sealing material contained within the reservoir for wetting the sealing surface, the sealing material including solid particles held in a suspension, solidification of the solid particles at least partially in the groove between the sealing surface and the sealing structure acting to seal defects between the sealing surface and the sealing structure.

2. (Previously Presented) The replaceable ink container of claim 1 wherein the solid particles are pigment particles.

3. (Previously Presented) The replaceable ink container of claim 1 wherein the solid particles are carbon black particles.

4. (Previously Presented) The replaceable ink container of claim 1 wherein the suspension is a dispersant.

5. (Previously Presented) The replaceable ink container of claim 1 wherein the sealing material contained within the reservoir is a quantity of ink.

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6. (Original) The replaceable ink container of claim 1 wherein the sealing surface is configured to be sufficiently wettable such that the sealing surface is wet by the sealing material.

7. (Previously Presented) A method for forming a seal between a replaceable ink container and a sealing structure, the method comprising:

wetting a sealing surface around a fluid outlet on the replaceable ink container with a sealing material defined by solid particles held in a suspension which is contained within the replaceable ink container;

receiving a fluid inlet through the fluid outlet;

engaging the sealing surface with a sealing structure whereby the sealing material is disposed there between; and

solidifying the sealing material at least partially in a groove in the sealing structure so that the solid particles fall out of the suspension and seal defects between the sealing surface and the sealing structure.

8. (Original) The method of claim 7 wherein the sealing material is an ink contained within the replaceable ink container.

9. (Cancelled)

10. (Currently Amended) A replaceable ink container for providing ink to an inkjet printing system, the inkjet printing system having a receiving station for receiving the replaceable ink container, the receiving station having a fluid inlet and a sealing structure, the replaceable ink container comprising:

a storage reservoir having a capillary storage material disposed therein for retaining ink, the storage reservoir defining a fluid outlet and a sealing surface configured for engaging the sealing structure proximate the fluid outlet, wherein the fluid outlet is configured to allow passage of the fluid inlet into the storage reservoir ~~and prevent passage of the sealing~~

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structure into the storage reservoir, and wherein the engaged sealing surface and sealing structure define a groove therebetween; and

an ink retained within the capillary storage material, the ink having particles suspended therein, the particles solidifying at least partially in the groove between the sealing surface and the sealing structure to seal defects between the sealing surface and the sealing structure.

11. (Previously Presented) The replaceable ink container of claim 10 wherein the particles are pigment particles.

12. (Previously Presented) The replaceable ink container of claim 10 wherein the particles are carbon black particles.

13. (Original) The replaceable ink container of claim 10 wherein the ink further includes a dispersant.

14. (Original) The replaceable ink container of claim 10 wherein the sealing surface proximate the fluid outlet is configured to be wetted by the ink stored within the ink container.

15. (Previously Presented) The replaceable ink container of claim 10 wherein the sealing surface is configured for enhanced wettability such that the sealing surface is wet by the ink.

16. (Currently Amended) A replaceable printing component for an inkjet printing system configured for receiving the replaceable printing component, the inkjet printing system having a fluid inlet and a sealing structure, the replaceable printing component comprising:
a fluid outlet configured to allow passage of the fluid inlet therethrough ~~and prevent passage of the sealing structure therethrough;~~

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a sealing surface configured for engaging a corresponding sealing structure on the inkjet printing system and defining a groove between the engaged sealing surface and sealing structure; and

wherein the sealing surface is configured so that sealing material, defined by solid particles held in a suspension, wets the sealing surface so that solidification of the solid particles in the groove between the sealing surface and the corresponding sealing structure seals defects between the sealing surface and the corresponding sealing structure.

17. (Original) The replaceable printing component of claim 16 wherein the replaceable printing component is a replaceable ink container.

18. (Original) The replaceable printing component of claim 16 wherein the replaceable printing component is a replaceable printhead.

19. (Original) The replaceable printing component of claim 16 wherein sealing material is pigmented ink.

20. (Previously Presented) The replaceable printing component of claim 16 wherein the sealing surface engages the corresponding sealing structure on the inkjet printing system to form a face seal.

21. (Canceled)

22. (Previously Presented) A replaceable ink container for providing ink to an inkjet printing system, the inkjet printing system having a receiving station, the receiving station having a plurality of corresponding electrical contacts, a fluid interconnect and a sealing structure surrounding the fluid interconnect, the replaceable ink container comprising:

a reservoir for retaining ink having particles suspended therein, the reservoir having a fluid outlet configured for allowing passage of the fluid interconnect into the reservoir;

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a sealing surface surrounding the fluid outlet for engaging the sealing structure, the sealing surface configured so that ink and particles suspended therein wet the sealing surface; and

a plurality of electrical contacts disposed on the reservoir and electrically connected to an electrical storage device, the plurality of electrical contacts configured for connection to the plurality of corresponding electrical contacts disposed in the receiving station.

23. (Previously Presented) The replaceable ink container of claim 22, wherein the reservoir 34 includes a leading end and a trailing end relative to an insertion direction, and a bottom surface extending between the leading end and the trailing end, and wherein the fluid outlet is disposed on the bottom surface of the reservoir, and wherein the plurality of electrical contacts are disposed on the leading end of the reservoir.

24. (Previously Presented) A replaceable ink container for providing ink to an inkjet printing system, the inkjet printing system having a receiving station, the receiving station having a plurality of corresponding electrical contacts, a fluid interconnect and a sealing structure surrounding the fluid interconnect, the replaceable ink container comprising:

a reservoir for retaining ink having particles suspended therein, the reservoir including a leading end and a trailing end relative to an insertion direction, and a bottom surface extending between the leading end and the trailing end, the reservoir having a fluid outlet disposed on the bottom surface of the reservoir configured for allowing passage of the fluid interconnect into the reservoir;

a sealing surface surrounding the fluid outlet for engaging the sealing structure, the sealing surface configured so that ink and particles suspended therein wet the sealing surface;

a plurality of electrical contacts disposed on the leading end of the reservoir and electrically connected to an electrical storage device, the plurality of electrical contacts configured for connection to the plurality of corresponding electrical contacts disposed in the receiving station; and

a latch for securing the ink container to the receiving station, the latch disposed on the trailing end of the reservoir.